ECOSYSTEM STATUS INDICATORS

Seabirds

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Research Needs

The Alaska Groundfish Fisheries draft Programmatic SEIS included several research and/or analysis needs identified by scientists currently researching seabirds in the BSAI and GOA ecosystems (NMFS 2001, pp. 4.3-1 and 4.3-50). As the information gaps are filled, the view of how seabirds are affected by fisheries may change. Additional research and analysis needs were identified in the Alaska Groundfish Fisheries Final Programmatic SEIS (NMFS 2004b) and by other seabird scientists (Shannon Fitzgerald, Alaska Fisheries Science Center, personal communication). Table 31 summarizes these research needs and notes the status of efforts. Steps toward addressing many of the identified research needs (Table 31) have been made, although in most cases these are works in progress. Efforts are underway to develop quantitative models to evaluate the potential for population-level impacts of fisheries on seabirds. For fulmars and albatrosses, this effort includes identification of colonies of provenance of birds taken in longline fisheries in Alaska.

Table 31. Research needs identified for seabird ecology and seabird/fishery interactions for groundfish fisheries in Alaska. STAL = Short-tailed albatross; LAAL = Laysan albatross; BFAL = black-footed albatross. NRC = National Research Council

Category	Research and analysis needs	Current Status	Authors or Contacts
Population level effects	Quantitative models on population-level impact of bycatch	BFAL model available; pelagic longline fishery	Lewison & Crowder 2003
	Seabird Population Assessments	Efforts underway for BFAL & LAAL STAL (unpubl.).	Seivert, USFWS Cochrane and Starfield, USFWS
	Assess bycatch mortality at the colony level.	2001-2003: genetic profiling of fulmar populations	Hatch, USGS-BRD, Anchorage.
		2002-2003: Genetic profiling of albatrosses	Walsh, U of Washington
	Quantitative models on impacts of fishery discards & offal.	NRC Fellowship began at AFSC in 2004	Fitzgerald & Edwards, NMFS
	Cost/benefit model of mortality and food provisioning	NRC Fellowship began at AFSC in 2004	Fitzgerald & Edwards, NMFS
Distribution & fisheries	Seasonal pattern of offal discharge vs seabird energy needs.	NRC should lay groundwork for this effort in 2005	Fitzgerald & Edwards, NMFS
	Short-tailed albatross spatial & temporal distribution	2001: Satellite telemetry studies begin on Torishima Island	Balogh, USFWS Anchorage
		2003 and 2005: At-sea capture in Alaska.	Balogh, USFWS Anchorage
	Pelagic Distribution of Seabirds	N. Pacific Pelagic Seabird Database begun in 2002; Stationary seabird surveys began in 2002. Line transects: need to use platforms of opportunity	USGS-BRD & USFWS, WA Sea Grant
Food & foraging	Examine temporal & spatial scale of seabird aggregations with respect to ephemeral & stable oceanographic features & prey aggregations.	Analysis of data on STAL underway Work on albatrosses available for central & S. Pacific No work specific to Alaska waters completed	Suryan et al., Oregon State U. various publications
	Identify & quantify seabird food items.	Great deal of work completed	Various authors
	Define seabird feeding areas (horizontally & vertically)	Telemetry for STAL only	Suryan et al., Oregon State U.
	Define relationship between feeding and fishing areas.	No comprehensive study.	
	Describe seabird diet during fall through spring months	No comprehensive study.	2002 overview: Kuletz, USFWS
	Examine regional patterns of prey use & trends over time.	Compilation of data from seabird colonies monitored during breeding season are available.	Dragoo et al. 2004, USFWS
	Examine saturation effect from pulsed fisheries	No work has been completed in the North Pacific on seabird's ability to take advantage of offal and discards.	
Gear & mitigation methods	Characterize seabird interaction with trawl cables and gear.	Preliminary work with electronic monitoring in 2002 Observer special project continuing in 2006.	Fitzgerald, NMFS
	Develop mitigation measures to reduce seabird interactions on trawl vessels	Measures developed and tested in 2005	WA Sea Grant, NMFS, Pollock Conservation Cooperative
	Analysis of multi-year data sets of factors affecting seabird bycatch	Thesis completed on factors affecting seabird bycatch in demersal groundfish longline vessels.	Dietrich University of Washington
	Evaluate effective methods for setting longlines underwater	Various projects, 1999 – ongoing.	Industry, WA Sea Grant, NMFS, and USFWS
	Evaluate integrated weight longlines	Ongoing since 2002	Melvin, WA Sea Grant